

ABSTRACT

A spin driven resistor comprising a magnetic body whose resistance increases due to resonance when subjected to an externally applied magnetic field while in the presence of an externally applied electromagnetic field is presented. The spin driven resistor has applications in a variety of spintronic devices including read heads and detectors that are very fast and operate at low power. The spin driven resistor may also be used to modulate spin value, spin tunnel junction, spin-LED, and spin-transistor devices by exposing device to an electromagnetic field and a magnetic field.